

ABSTRACT

An electronically commutated motor (10) is adapted to be powered directly by an AC voltage (U_{AC}) source, and comprises a permanent-magnet rotor (18), a stator having at least one winding phase (L_1, L_2, \dots, L_n), a rectifier (38) which generates, from the AC voltage (U_{AC}), a pulsating DC voltage (U_B) between a positive lead (30) and a negative lead (32) of a DC link (15). Also present is a bridge circuit (28A, 28B, 28C), connected to that DC link (15) and provided to supply current to the at least one winding phase (L_1, L_2, \dots, L_n), which comprises a switching element (50) controllable with a control voltage (U_{ST}) that is lower than the pulsating DC voltage (U_B) to be switched. An auxiliary circuit (34, 34') generates, from the pulsating DC voltage (U_B) at the DC link and from the AC voltage (U_{AC}), a control voltage (U_{ST}) for driving the switching element (50) that is lower than the pulsating DC voltage by an amount equal to a predetermined value (U_Δ). A preferred filter (140) for connection to an AC power grid is described. A preferred embodiment of the circuit includes a bridge circuit having a p-channel MOSFET (50) at the positive lead (30) and an n-channel MOSFET (52) at the negative lead (32) of the DC link (15).

BEST AVAILABLE COPY